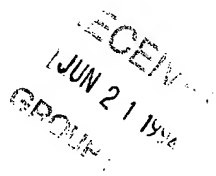
#20

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

REQUEST FOR RECONSIDERATION OF DECISION BY THE BOARD OF APPEALS



Re Appeal No:	92-3748
Serial No:	07/579,569
Filed:	09/10/90
Entitled:	ELECTRONIC BALLAST CATHODE HEATING CIRCUIT
Applicant:	Ole K. Nilssen
Group Art Unit:	2502
Examiner:	SON DINH

APPELLANT: Ole K. Nilssen
Caesar Drive
Barrington, Illinois 60010

Telephone: 708-658-5615

I, OLE K. NILSSEN, HEREWITH CERTIFY THAT THE DATE OF DEPOSIT WITH THE U.S. POSTAL SERVICE OF THIS PAPER OR FEE IS: 6-10-94

Commissioner of Patents and Trademarks
Washington, D.C. 20231

Under 37 C.F.R. 1.197(b), the above named Appellant (hereinafter "Applicant") herewith requests the Board of Appeals and Interferences ("Board") to reconsider that part of its decision wherein it affirmed Examiner's rejection of claims 1, 8-12 and 19-27 under 35 USC 103 as being unpatentable over Pitel and Cox.

Applicant believes the Board's decision to be in error and provides the following arguments in support of his position to that effect.

(a) At page 6 of its Decision, the Board states that:

"it appears from the remarks of Paper No. 16 that appellant does not fully appreciate the concept taught by Cox at column 5, lines 31-35 or that the concern relative to determining ...[paragraph]... 103 obviousness relates to combining reference teachings and not physial substitution of parts from one reference into another".

Of course, as Applicant sees it, he does understand the concept taught by Cox and he does appreciate "that the concern relative to determining ... obviousness relates to combining reference teachings and not physical substitution of parts from one reference into another".

However, unlike the Board, Applicant (just as would any other responsible person skilled in the particular art pertinent hereto) must consider the feasibility of combining the reference teachings in such manner as to attain the claimed invention; and -- as he stated at the bottom of page 2 of his Paper No. 16 -- Applicant finds that "Cox's circuit is simply not compatible with Pitel's circuit"; which is to say, the relied-upon feature of Cox's circuit (the "Cox feature") is not in any obvious manner combinable with the teachings of Pitel in such a way as to attain the claimed invention.

Applicant considers it utterly irresponsible for the Board merely to assert (i.e., without providing an explanation of such nature as to be readily understandable by a properly skilled person) that the relied-upon feature of Cox can indeed be incorporated into Pitel's teachings in such a way as to attain the claimed invention. As a very minimum, if the Board were to assert such a position, it should provide some sort of explanation with respect to how it would propose actually to effectuate such incorporation.

For instance, for the quasi-resonant circuit of Cox (which consists of his elements 18 and 2b) to be functional, it is necessary that the voltage waveform of the high-frequency voltage applied at his output transformer's primary winding (i.e., 2a) be "sinusoidal-like" (see Cox's Fig. 4A (or 7A) "which shows the waveform of the collector voltage of one of the transistors of the circuit of FIG. 2 under load conditions".

On the other hand, as does any ordinary half-bridge inverter (and as does Applicant's inverter circuit as well), Pitel's inverter circuit inherently provides for a squarewave-like (i.e., not a "sinusoidal-like") inverter output voltage.

In modifying Pitel's teachings with the feature defined by Cox at his column 5, lines 30-35 (i.e., the Cox feature), how does the Board envision providing the "sinuoidal-like" output voltage required for effectuating this Cox feature?

In fact, to a person possessing at least ordinary skill in the particular art pertinent hereto, in considering the proposition of incorporating the Cox feature into Pitel's cincuit, so many basic incompatibilities crop up as to make it very unclear as to how actually to accomplish such a proposition.

(b) At page 8 of its Decision, the Board states that:

"the claimed resonant frequency being chosen to be lower than the inverter fundamental frequency is not disclosed to provide any benefit, to be in any way critical or to solve any problem not solved if the resonant frequency is chosen to be equal to the fundamental frequency, as it is in Pitel.

This statement is erroneous.

At page 7 of his specifiation, Applicant states that:

"It has been found desirable to regulate the transistor inversion frequency ... to be equal to or higher than the natural resonance frequency of the inductor and capacitor combination".

In Fig. 3 of his specification, Applicant clearly shows that the inverter's output current (which, with reference to Fig. 3D, is the same as the "CURRENT THROUGH L"), is clearly delayed in phase with respect to the phasing of the fundamental component of the inverter's output voltage (which is shown in Fig. 3A). As a person possessing ordinary skill in the particular art pertinent hereto would readily understand, this fact inherently means that the inverter's L-C load circuit {which consists of tank-inductor 51 series-connected with (the parallel-loaded) tank-capacitor 52} exhibits a net inductive characteristic; which means that the inverter's series-connected L-C circuit must have a natural resonance frequency below the fundamental frequency of the inverter's output voltage.

Further, as would be clear to an appropriately skilled artisan, for the inverter circuit of Fig. 2 to operate (i.e., to self-oscillate) it is necessary that the inverter output current be inductive; otherwise the self-oscillating inverter would cease to self-oscillate for the reason that, after one transistor is switched OFF, the inverter's output voltage would not automatically commutate so as to cause the other transistor to switch ON, thereby to start its ON-period, etc.

Thus, with respect to Applicant's inverter circuit (e.g., as represented by his Fig. 2), it is implicit and inherent that the inverter's output load must be inductive in nature; which means that the inverter's inversion frequency must in fact be higher than the natural resonance frequency of the inverter's tuned loading circuit. Only in a limiting sense -- never to be attained in reality -- may the inverter's inversion frequency actually be equal to the natural resonance frequency of the inverter's tuned loading circuit.

In other words, both by implication and inherency, Applicant has indeed shown that there is benefit associated with having the natural resonance frequency of the inverter's tuned loading circuit be higher than the inverter fundamental frequency.

{Of course, with a series-tuned loading circuit, the higher the inverter frequency, the more perfectly inductive this loading circuit will appear to be; while at resonance, it will appear as a perfectly resistive impedance.}

(c) With respect to claims 28-29, at page 9 of its decision, the Board states that:

"The clear advantage of using this circuit in its 110v Figure 2 mode is the increased voltage provided vis-a-vis the Pitel DC mode".

However, the Board fails to explain why there is some kind of advantage associated with providing "increased voltage" for the Pitel circuit.

To the best of Applicant's knowledge, with respect to power transistors available at the time of Pitel's invention, it would be a distinct disadvantage to provide for "increased voltage" for powering an inverter circuit. At that time, high voltage power transistors had undesirably slow switching times and were scarce, unreliable, and very expensive.

Ole K. Nilssen, Pro Se Applicant